

CLAIMS

1. An exposure apparatus for exposing a substrate through a mask formed with a pattern,

5 said exposure apparatus comprising:

a stage which holds and moves said mask,
an acceleration detection device which detects information relating to acceleration of the stage, and

10 a control device which controls movement of said stage so that the acceleration of said stage as based on the information detected by said acceleration detection device becomes within a range of acceleration of said stage found in advance where
15 offset will not occur in the mask.

2. An exposure apparatus for exposing a substrate through a mask formed with a pattern,

said exposure apparatus comprising:

a stage which holds and moves said mask,
20 an acceleration detection device which detects information relating to acceleration of said stage,

a posture detection device which detects a posture of said mask on said stage, and

25 a control device which initiates detection

by said posture detection device when the acceleration of said stage as based on the information detected by said acceleration detection device becomes out of the range of acceleration of said stage found in advance where offset will not occur in the mask and performs processing for notifying an operator of the fact that it has judged and that offset has occurred in said mask when that is the case.

3. An exposure apparatus as set forth in claim 2, which is further comprising a posture adjustment device which adjusts the relative positional relationship between the mask on the stage and the substrate and

adjusts the relative positional relationship of the mask and substrate so as to cancel out offset by said posture adjustment device when said control device judges that offset has occurred in the mask.

4. An exposure apparatus as set forth in claim 1 or 2, which derives the range of acceleration by a process of trial and error by repeatedly detecting offset of said mask while increasing or decreasing the acceleration of the stage in steps.

5. An exposure apparatus as set forth in claim 4, wherein the range of acceleration is derived at

least at one of the time of startup of said exposure apparatus and the time of exchange of said mask.

6. An exposure apparatus as set forth in claim 1 or 2, further comprising a storage device which stores the range of acceleration of said stage.

7. An exposure apparatus as set forth in claim 1 or 2, wherein

said apparatus is further comprising a sensor which detects information relating to a capability of said stage to hold said mask and

said control device changes said range of acceleration accordance with said information.

8. An exposure method for exposing a substrate through a mask formed with a pattern,

said exposure method comprising:

finding in advance a range of acceleration of a stage holding and moving said mask or said substrate where offset will not be caused in said mask or said substrate due to acceleration or deceleration of the stage and

performing exposure while controlling the movement of said stage within the range of acceleration.

9. An exposure method for exposing a substrate through a mask formed with a pattern,

said exposure method comprising:

finding in advance a range of acceleration
of a stage holding and moving said mask or said
substrate where offset will not be caused in said mask
or said substrate due to acceleration or deceleration
of the stage,

detecting information relating to
acceleration of said stage and detecting the presence
of offset of said mask or said substrate when the
acceleration of said stage as based on said
information is outside of the range of acceleration,
and

adjusting the relative positional
relationship between said mask and said substrate so
as to cancel out offset when judging that offset has
occurred in said mask or said substrate.

10. An exposure method as set forth in claim 9,
further comprising performing processing to notify an
operator when judging that offset has occurred in the
mask or substrate.

11. An exposure method as set forth in claim 8 or
9, further comprising

detecting information relating to the
capability of the stage to hold the mask and

changing the range of acceleration in

accordance with the information.

12. An exposure apparatus for exposing a substrate through a mask formed with a pattern,

said exposure apparatus comprising:

5 a stage which holds and moves said mask,
an acceleration detection device which detects information relating to acceleration of said stage,

10 a posture adjustment device which adjusts a relative positional relationship between said mask and said substrate,

15 a storage device in which offset information showing the relationship between the acceleration of the stage and the offset of the mask found in advance is stored, and

20 a control device which retrieves from said storage device the offset information corresponding to the acceleration of the stage based on the information detected by said acceleration detection device and adjusting the relative positional relationship of said mask and said substrate so as to cancel out the offset by said posture adjustment device.

13. An exposure method for exposing a substrate through a mask formed with a pattern,

25 said exposure method comprising performing

exposure by

finding in advance information showing
offset occurring in said mask or substrate due to
acceleration or deceleration of a stage for holding
5 and moving said mask or said substrate in relation
with said acceleration and

detecting information relating to
acceleration of said stage and adjusting a relative
positional relationship between said mask and said
10 substrate so as to cancel out the offset based on
offset information corresponding to the acceleration
of said stage as based on the information.

14. An exposure apparatus for exposing a
substrate through a mask formed with a pattern,

15 said exposure apparatus comprising:
a stage which holds said mask,
a detection device which detects
information relating to acceleration of said stage,
and

20 an adjustment device which adjusts a
relative positional relationship between said mask and
said substrate at the time of exposure in accordance
with said information.

15. An exposure apparatus for exposing a
25 substrate through a mask formed with a pattern,

said exposure apparatus comprising:
a stage which holds said mask,
a detection device which detects
information relating to acceleration of said stage,
5 and

a control device which performs at least
one of an operation for recovery from exposure error
occurring due to said offset due to movement of said
stage and notification of said exposure error.

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